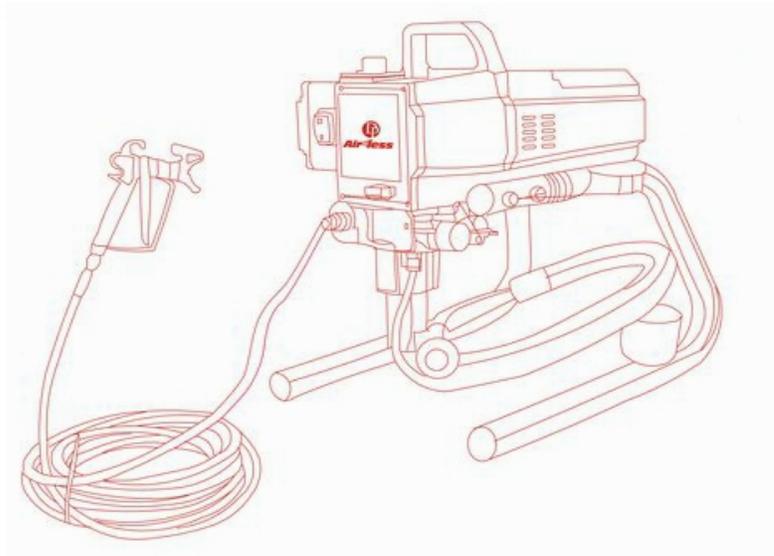




Operating Instruction

Product model: DP-6389, DP-6640i, DP-6740i



Professional airless paint sprayer [piston pump]



DP-6389
1hp
1.8L/min

DP-6640i
1.5hp
2.4L/min

DP-6740i
1.8hp
3L/min

Please read and keep this manual, Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instruction for future reference.

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Safety Precautions

This manual contains information that must be read and understood before using the equipment. When you come to an area that has one of the following symbols, pay particular attention and make certain to heed the safeguard.



This symbol indicates a potential hazard that may cause serious injury or loss of life. Important safety information will follow.



This symbol indicates a potential hazard to you or to the equipment. Important information that tells how to prevent damage to the equipment or how to avoid causes of minor injuries will follow.

NOTE: Notes give important information which should be given special attention.



Airless units develop extremely high spraying pressures.



- Never put your fingers, hands or any other parts of the body into the spray jet.
- Never point the spray gun at yourself or anybody else.
- Never use the spray gun without the safety guard.

Attention! Danger of injury by injection!

In case of injury to skin caused by coating materials or solvents consult a doctor immediately. Inform the doctor of the type of coating material or cleaning agent with which the injury was caused.

The operating instructions state that the following points must always be observed before starting up:

1. Faulty units should not be used.
2. Secure spray gun using the safety catch on the trigger.
3. Ensure that the unit is properly earthed.
4. Check the permissible operating pressures.
5. Check all connections for leaks.

The instructions regarding regular cleaning and maintenance of the unit must be strictly observed.

Before any work is done on the unit or for every break in work the following rules must be observed:

1. Release the pressure from the spray gun and hose.
2. Secure the spray gun using the safety catch on the trigger.
3. Turn off the motor.

Be safety-conscious!

All local regulations in force must be observed.

In order to ensure safe operation of the airless systems the safety regulations listed below must be followed:

1. In order to avoid dangers, read the operating instructions carefully and follow the instructions laid down in them.
2. Do not use materials with a flash point below 21°C (70°F).
3. The use of this unit is prohibited in workshops which are covered under the explosion prevention regulations.
4. Never spray near sources of ignition; e.g. open flames, cigarettes — also cigars and pipes are sources of ignition — sparks, hot wires and hot surfaces, etc.
5. Attention! Danger of injury by injection!

Never point the spray gun at yourself or anyone else.

Never put your fingers or hands into the spray jet. The very high spraying pressures can cause very serious injuries. Never use the spray gun without the safety guard.



When installing and removing the tip and during breaks in work the spray gun must always be secured, so that it cannot be activated.

6. Wear respiratory equipment when spraying. The operator must be provided with a protective mask.

In order to prevent work related illness, the manufacturer's regulations for the materials, solvents, and cleaning agents used must be observed when preparing, working with and cleaning the unit. Protective clothing, gloves and, in certain cases, protective skin cream are necessary to protect the skin.

7. The spray gun and high pressure hose between the unit and spray gun must be of a sufficient standard for the pressure produced in the unit.

The permissible operating pressure for the high-pressure hose, the manufacturer and date of manufacture must be indicated by a permanent identification marking on the hose. Furthermore, it must be constructed so that the electrical resistance between the connections to the unit and the spray gun is equal to or less than one megohm.

8. Under certain conditions the flow speed can cause an electrostatic charge on the unit. This could cause sparks or flames on discharging. It is, therefore, important that the unit is always earthed over the electrical installation. The contact should be made using a shockproof socket earthed in accordance with the regulations.

9. Attention! Please observe the following when working inside and outside:
No solvent gasses should be carried to the unit. No solvent gasses should form near the unit. Set up the unit on the opposite side to the object being sprayed. When spraying outdoors, take the wind direction into account. When spraying indoors there must be sufficient ventilation to ensure that the solvent gasses are carried away. A minimum distance of 6.1m (20') must be observed between the unit and object being sprayed.
10. Extraction equipment should be installed by the user in accordance with the local regulations.
11. The objects being sprayed must be earthed.
12. When cleaning the unit, solvent should never be sprayed into a container with only a small opening (bunghole). An explosive gas/air mixture is likely to form. The container must be earthed.
13. Cleaning the unit.
A harsh jet should never be used to spray the unit. In particular a high-pressure cleaner or high-pressure steam cleaner should never be used. There is a danger that water will penetrate into the unit and cause a short-circuit.
14. Pulling the trigger causes a recoil force to the hand that is holding the spray gun.
The recoil force of the spray gun is particularly powerful when the tip has been removed and a high pressure has been set on the airless high-pressure pump. Therefore, when cleaning without tip set the pressure control valve to the lowest pressure.
15. The mains plug should always be disconnected from the socket when work is being carried out on the electrical components.
16. Work or repairs should only be carried out on electrical equipment by a trained electrician, even if the work is described in the operating instructions. No liability will be accepted for incorrectly installed electrics.
17. Positioning when the ground is uneven.
The front of the unit must point downward so that the machine does not slip away.

HAZARD: INJECTION INJURY - A high pressure stream of paint produced by this equipment can pierce the skin and underlying tissues, leading to serious injury and possible amputation.

DO NOT TREAT AN INJECTION INJURY AS A SIMPLE CUT! Injection can lead to amputation. See a physician immediately.

PREVENTION:

- The maximum operating range of the unit is 221 BAR (3200 PSI) fluid pressure.
- NEVER aim the gun at any part of the body.
- NEVER allow any part of the body to come in contact with the fluid stream. DO NOT come in contact with a fluid stream created by a leak in the fluid hose.
- NEVER put your hand in front of the gun. Gloves will not provide protection against an injection injury.
- ALWAYS lock the gun trigger, shut the fluid pump off and release all pressure before servicing, cleaning the tip guard, changing tips, or leaving unattended. Pressure will not be released by turning off the engine. The PRIME/SPRAY knob must be turned to PRIME to relieve the pressure. Refer to the PRESSURE RELIEF PROCEDURE described in this manual.
- The tip guard must always be in place while spraying. The tip guard provides some protection against injection injuries but is mainly a warning device.
- ALWAYS remove the spray tip before flushing or cleaning the system.
- The paint hose can develop leaks from wear, kinking and abuse. A leak is capable of injecting material into the skin. Inspect the paint hose before each use.

NOTE TO PHYSICIAN:

Injection into the skin is a traumatic injury. It is important to treat the injury surgically as soon as possible. DO NOT delay treatment to research toxicity. Toxicity is a concern with some coatings injected directly into the blood stream. Consultation with a plastic surgeon or reconstructive hand surgeon may be advisable.

HAZARD: EXPLOSION OR FIRE - Solvent and paint fumes can explode or ignite, causing property damage and/or severe injury.

PREVENTION:

- Fire extinguishing equipment must be present and in good working order.
- Use only conductive or earthed high pressure fluid hoses for airless applications. Be sure that the gun is earthed properly through hose connections.
- The pump must be connected to an earthed object. Use the green earthing wire to connect the pump to a water pipe, steel beam, or other electrically earthed surface.
- When flushing equipment use the lowest possible pressure.

HAZARD: EXPLOSION HAZARD DUE TO INCOMPATIBLE MATERIALS- May cause property damage or severe injury.

PREVENTION:

- Do not use bleach.
- Do not use halogenated hydrocarbon solvents such as methylene chloride and 1,1,1 - trichloroethane. They are not compatible with aluminum and may cause an explosion. If you are unsure of a material's compatibility with aluminum, contact your coating's supplier.

HAZARD: GENERAL - May cause property damage or severe injury.

PREVENTION:

- This high pressure airless pump is designed to be used with manufacturer authorized parts only. When using this pump with parts that do not comply with the minimum specifications and safety devices of the pump manufacturer, the user assumes all risks and liabilities.
- Before each use, check all hoses for cuts, leaks, abrasion or bulging of cover, as well as damage or movement of couplings. If any of these conditions exist, replace the hose immediately. Never repair a paint hose. Replace it with another earthed hose.
- Wear protective eyewear.
- Do not spray on windy days.

Earthing Instructions

This product must be earthed. In the event of an electrical short circuit, earthing reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having an earthing wire with an appropriate earthing plug. The plug must be plugged into an outlet that is properly installed and earthed in accordance with all local codes and ordinances.

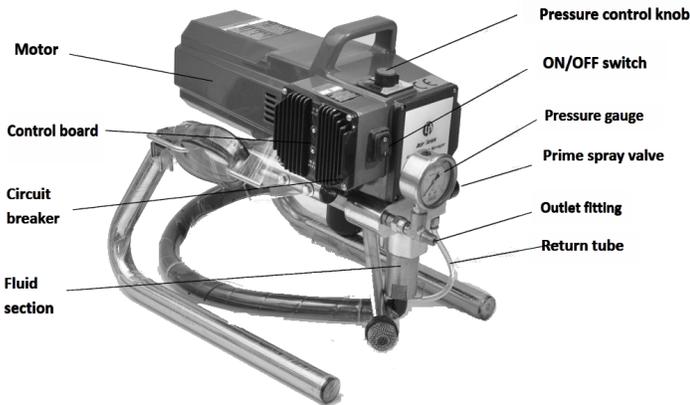
DANGER — Improper installation of the earthing plug can result in a risk of electric shock.

If repair or replacement of the cord or plug is necessary, do not connect the green earthing wire to either flat blade terminal. The wire with insulation having a green outer surface with or without yellow stripes is the earthing wire and must be connected to the earthing pin.

Check with a qualified electrician or serviceman if the earthing instructions are not completely understood, or if you are in doubt as to whether the product is properly earthed. Do not modify the plug provided. If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician.

General Description

This airless sprayer is a precision power tool used for spraying many types of materials. Read and follow this instruction manual carefully for proper operating instructions, maintenance, and safety information.



Operation



This equipment produces a fluid stream at extremely high pressure. Read and understand the warnings in the Safety Precautions section at the front of this manual before operating this equipment.

Setup

Perform the following procedure before plugging in the power cord of an electric unit.

1. Ensure that the suction set and the return hose are attached and secure.
2. Using a wrench, attach a minimum of 15m (50') x 10mm (1/4") nylon airless spray hose to the unit. Tighten securely.
3. Attach an airless spray gun to the spray hose. Using two wrenches (one on the gun and one on the hose), tighten securely.

NOTE: Do not attach the tip to the spray gun yet. Remove the tip if it is already attached.



Make sure all airless hoses and spray guns are electrically grounded and rated for at least 228 bar (3300 psi) fluid pressure.

4. Make sure the pressure control knob is in its OFF position in the black zone.
5. Make sure the ON/OFF switch is in its OFF position.
6. Fill the oil cup with 15g (one tablespoon) of piston seal lubricant (Piston Lube).



Never operate unit for more than ten seconds without fluid. Operating this unit without fluid will cause unnecessary wear to the packings.

7. Make sure the electrical service is correct for the unit.
8. Plug the power cord into a properly grounded outlet at least 7.6m (25') from the spray area.



Always use a minimum 12 gauge, three-wire extension cord with a grounded plug. Never remove the third prong or use an adapter.

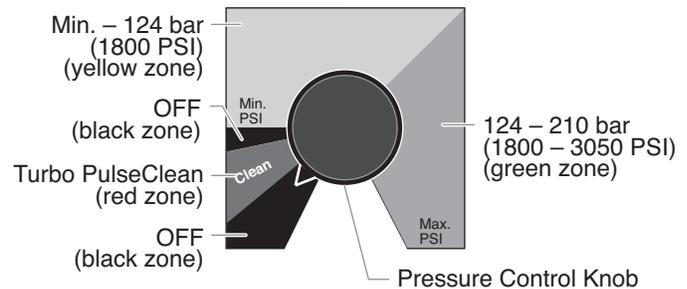
Preparing a New Sprayer

If this unit is new, it is shipped with test fluid in the fluid section to prevent corrosion during shipment and storage. This fluid must be thoroughly cleaned out of the system with mineral spirits before you begin spraying.



Always keep the trigger lock on the spray gun in the locked position while preparing the system.

1. Place the suction tube into a container of mineral spirits that has a flash point of 60°C (140°F) or above.
2. Place the return hose into a metal waste container.
3. Set the pressure to minimum by turning the pressure control knob to the "Min" setting in the yellow zone.



4. Move the PRIME/SPRAY valve down to the PRIME position.
5. Turn the unit on by moving the ON/OFF switch to the ON position.
6. Allow the sprayer to run for 15–30 seconds to flush the test fluid out through the return hose and into the waste container.
7. Turn the unit off by moving the ON/OFF switch to the OFF position.

Preparing to Paint

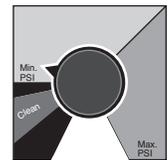
Before painting, it is important to make sure that the fluid in the system is compatible with the paint that is going to be used.

NOTE: Incompatible fluids and paint may cause the valves to become stuck closed, which would require disassembly and cleaning of the sprayer's fluid section.



Always keep the trigger lock on the spray gun in the locked position while preparing the system.

1. Place the suction tube into a container of the appropriate solvent for the material being sprayed (refer to recommendations of the material manufacturer). An example of the appropriate solvent is water for latex paint.
2. Place the return hose into a metal waste container.
3. Set the pressure to minimum by turning the pressure control knob to the "Min" setting in the yellow zone.



4. Move the PRIME/SPRAY valve down to the PRIME position.
5. Turn the unit on by moving the ON/OFF switch to the ON position.
6. Allow the sprayer to run for 15–30 seconds to flush the old solvent out through the return hose and into the metal waste container.

- Turn the unit off by moving the ON/OFF switch to the OFF position.

NOTE: Make sure that the spray gun does not have a tip or tip guard installed.

- Move the PRIME/SPRAY valve up to the SPRAY position.
- Turn the unit on.
- Unlock the gun by turning the gun trigger lock to the unlocked position.

⚠ WARNING

Ground the gun by holding it against the edge of the metal container while flushing. Failure to do so may lead to a static electric discharge, which may cause a fire.



- Trigger the gun into the metal waste container until the old solvent is gone and fresh solvent is coming out of the gun.
- Lock the gun by turning the gun trigger lock to the locked position.
- Set down the gun and increase the pressure by turning the pressure control knob slowly clockwise into the green zone.
- Check the entire system for leaks. If leaks occur, follow the "Pressure Relief Procedure" in this manual before tightening any fittings or hoses.
- Follow the "Pressure Relief Procedure" in this manual before changing from solvent to paint.



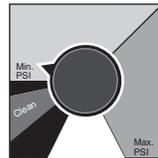
Trigger lock in locked position.

⚠ WARNING

Be sure to follow the pressure relief procedure when shutting the unit down for any purpose, including servicing or adjusting any part of the spray system, changing or cleaning spray tips, or preparing for cleanup.

Painting

- Place the suction tube into a container of paint.
- Place the return hose into a metal waste container.
- Set the pressure to minimum by turning the pressure control knob to the "Min" setting in the yellow zone.
- Move the PRIME/SPRAY valve down to the PRIME position.
- Turn the unit on by moving the ON/OFF switch to the ON position.
- Allow the sprayer to run until paint is coming through the return hose into the metal waste container.
- Turn the unit off by moving the ON/OFF switch to the OFF position.
- Remove the return hose from the waste container and place it in its operating position above the container of paint.
- Move the PRIME/SPRAY valve up to the SPRAY position.
- Turn the unit on.
- Unlock the gun by turning the gun trigger lock to the unlocked position.



⚠ WARNING

Ground the gun by holding it against the edge of the metal container while flushing. Failure to do so may lead to a static electric discharge, which may cause a fire.



- Trigger the gun into the metal waste container until all air and solvent is flushed from the spray hose and paint is flowing freely from the gun.

- Lock the gun by turning the gun trigger lock to the locked position.
- Turn the unit off.
- Attach tip guard and tip to the gun as instructed by the tip guard or tip manuals.



Trigger lock in locked position.

⚠ WARNING

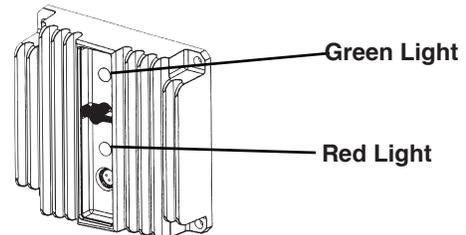
POSSIBLE INJECTION HAZARD. Do not spray without the tip guard in place. Never trigger the gun unless the tip is in either the spray or the unclog position. Always engage the gun trigger lock before removing, replacing or cleaning tip.

- Turn the unit on.
- Increase the pressure by turning the pressure control knob slowly clockwise toward the green zone and test the spray pattern on a piece of cardboard. Adjust the pressure control knob until the spray from the gun is completely atomized. Try to keep the pressure control knob at the lowest setting that maintains good atomization.

NOTE: Turning the pressure up higher than needed to atomize the paint will cause premature tip wear and additional overspray.

Electronic Pressure Control Indicators

The following is a description of the indicators on the electronic pressure control.



Pressure Indicator

The pressure indicator shows the current operating pressure of the sprayer. It has three different indications: blinking red and blinking green by turns, solid green, solid red

Blinking Red

When the pressure indicator is blinking red, then stopped, the sprayer is operating in 200 bar, which means;

- The sprayer is at the proper pressure setting for spraying

Blinking Red and Blinking Green By turns

- The sprayer is operating at peak performance at a high pressure setting

Solid Green

The pressure indicator is solid green when spraying, and the pressure is not enough to atomize the paint, it indicates one of the following:

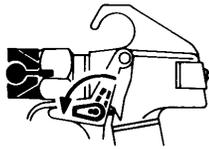
- Tip Wear Indicator — when spraying with latex or at high pressure the solid green appears. This means the tip is worn and needs to be replaced.
- Tip Too Large — when a tip that is too large for the sprayer is put in the gun.
- Fluid Section Wear — if a solid green pressure indicator appears when using a new tip and the pressure is set at maximum, service may be required (worn packings, worn piston, stuck valve, etc...).

Pressure Relief Procedure

⚠ WARNING

Be sure to follow the pressure relief procedure when shutting the unit down for any purpose, including servicing or adjusting any part of the spray system, changing or cleaning spray tips, or preparing for cleanup.

- Lock the gun by turning the gun trigger lock to the locked position.
- Turn the unit off by moving the ON/OFF switch to the OFF position.
- Turn the pressure control knob counterclockwise to its OFF position in the black zone.
- Unlock the gun by turning the gun trigger lock to the unlocked position.
- Hold the metal part of the gun firmly to the side of a metal container to ground the gun and avoid a build up of static electricity.
- Trigger the gun to remove any pressure that may still be in the hose.
- Lock the gun by turning the gun trigger lock to the locked position.
- Move the PRIME/SPRAY valve down to the PRIME position.



Trigger lock in locked position.



Spraying

⚠ WARNING

POSSIBLE INJECTION HAZARD. Do not spray without the tip guard in place. Never trigger the gun unless the tip is in either the spray or the unclog position. Always engage the gun trigger lock before removing, replacing, or cleaning tip.

Spraying Technique

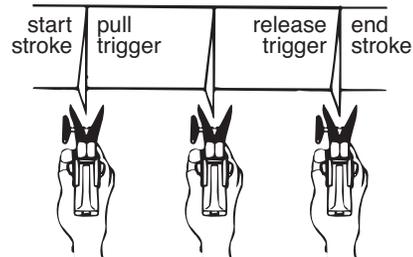
The following techniques, if followed, will assure professional painting results.

Hold the gun perpendicular to the surface and always at equal distance from the surface. Depending on the type of material, surface, or desired spray pattern, the gun should be held at a distance of 30 to 35 cm (12 to 14 inches).

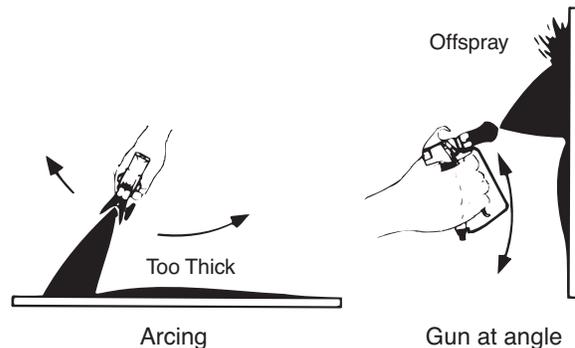
Move the gun either across or up and down the surface at a steady rate. Moving the gun at a consistent speed conserves material and provides even coverage. The correct spraying speed allows a full, wet coat of paint to be applied without runs or sags.

Holding the gun closer to the surface deposits more paint on the surface and produces a narrower spray pattern. Holding the gun farther from the surface produces a thinner coat and wider spray pattern. If runs, sags, or excessive paint occur, change to a spray tip with a smaller orifice. If there is an insufficient amount of paint on the surface or you desire to spray faster, a larger orifice tip should be selected.

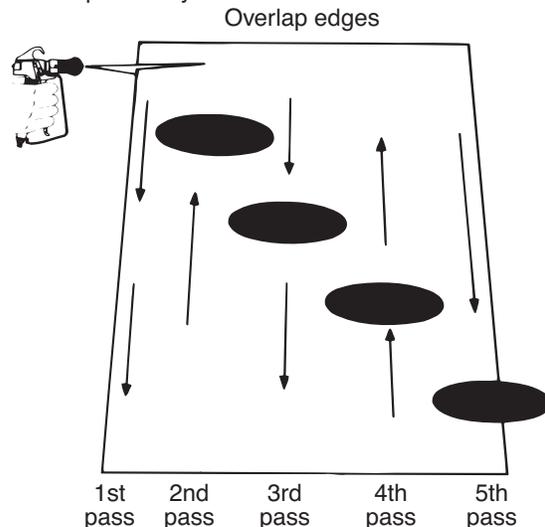
Maintain uniform spray stroke action. Spray alternately from left to right and right to left. Begin movement of the gun before the trigger is pulled.



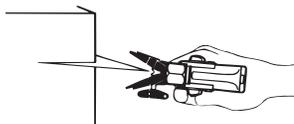
Avoid arcing or holding the gun at an angle. This will result in an uneven finish.



Proper lapping (overlap of spray pattern) is essential to an even finish. Lap each stroke. If you are spraying horizontally, aim at the bottom edge of the preceding stroke, so as to lap the previous pattern by 50%.



For corners and edges, split the center of the spray pattern on the corner or edge and spray vertically so that both adjoining sections receive approximately even amounts of paint.



When spraying with a shield, hold it firmly against the surface. Angle the spray gun slightly away from the shield and toward the surface. This will prevent paint from being forced underneath.

Shrubs next to houses should be tied back and covered with a canvas cloth. The cloth should be removed as soon as possible. DP gun extensions are extremely helpful in these situations.

Nearby objects such as automobiles, outdoor furniture, etc. should be moved or covered whenever in the vicinity of a spray job. Be careful of any other surrounding objects that could be damaged by overspray.

Practice

1. Be sure that the paint hose is free of kinks and clear of objects with sharp cutting edges.
2. Turn the pressure control knob counterclockwise to its lowest setting.
3. Turn the PRIME/SPRAY valve up to its SPRAY position.
4. Turn the pressure control knob clockwise to its highest setting. The paint hose should stiffen as paint begins to flow through it.
5. Unlock the gun trigger lock.
6. Trigger the spray gun to bleed air out of the hose.
7. When paint reaches the spray tip, spray a test area to check the spray pattern.

8. Use the lowest pressure setting necessary to get a good spray pattern. If the pressure is set too high, the spray pattern will be too light. If the pressure is set too low, tailing will appear or the paint will spatter out in gobs rather than in a fine spray.



Good spray pattern



Paint tailing pattern

Cleanup

WARNING

Special cleanup instructions for use with flammable solvents:

- Always flush spray gun preferably outside and at least one hose length from spray pump.
- If collecting flushed solvents in a one gallon metal container, place it into an empty five gallon container, then flush solvents.
- Area must be free of flammable vapors.
- Follow all cleanup instructions.

CAUTION

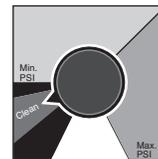
The sprayer, hose, and gun should be cleaned thoroughly after daily use. Failure to do so permits material to build up, seriously affecting the performance of the unit.

WARNING

Always spray at minimum pressure with the gun nozzle tip removed when using mineral spirits or any other solvent to clean the sprayer, hose, or gun. Static electricity buildup may result in a fire or explosion in the presence of flammable vapors.

1. Follow the "Pressure Relief Procedure" found in the Operation section of this manual.
2. Remove the gun tip and tip guard and clean with a brush using the appropriate solvent.

3. Place the suction tube into a container of the appropriate solvent (refer to recommendations of the material manufacturer). An example of the appropriate solvent is water for latex paint.
4. Place the return hose into a metal waste container.
5. Move the PRIME/SPRAY valve down to its PRIME position.
6. Set the pressure to Turbo PulseClean by turning the pressure control knob to its CLEAN position in the red zone.
7. Turn on the unit by moving the ON/OFF switch to the ON position.
8. Allow the solvent to circulate through the unit and flush the paint out of the return hose into the metal waste container.
9. Turn off the unit by moving the ON/OFF switch to the OFF position.
10. Move the PRIME/SPRAY valve up to its SPRAY position.
11. Turn on the unit.



WARNING

Ground the gun by holding it against the edge of the metal container while flushing. Failure to do so may lead to a static electric discharge, which may cause a fire.



12. Trigger the gun into the metal waste container until the paint is flushed out of the hose and solvent is coming out of the gun.
13. Continue to trigger the spray gun into the waste container until the solvent coming out of the gun is clean.

NOTE: For long-term or cold weather storage, pump mineral spirits through the entire system. For short-term storage when using latex paint, pump water mixed with DP liquid shield through the entire system

14. Follow the "Pressure Relief Procedure" found in the Operation section of this manual.
15. Unplug the unit and store in a clean, dry area.

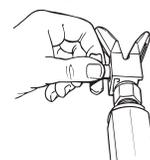
CAUTION

Do not store the unit under pressure.

Cleaning the Spray Tip

1. Flush the gun with solvent immediately after the work is completed.
2. Oil the retractor pins to prevent them from seizing up.

Should the spray tip become clogged, reverse the spray tip with the lever and pull the trigger. Once the obstruction comes out of the spray tip, release the trigger, reverse the spray tip back to the spray pattern setting, and resume spraying.



WARNING

Do not attempt to clean the tip with your finger.

Do not use a needle or other sharp pointed instrument to clean the tip. The hard tungsten carbide is brittle and can be chipped.

Maintenance

⚠ WARNING

Before proceeding, follow the Pressure Relief Procedure outlined previously in this manual. Additionally, follow all other warnings to reduce the risk of an injection injury, injury from moving parts or electric shock. Always unplug the sprayer before servicing!

General Repair and Service Notes

The following tools are needed when repairing this sprayer:

- Phillips Screwdriver
- Needle Nose Pliers
- Adjustable Wrench
- Rubber Mallet
- Flat-blade Screwdriver

1. Before repairing any part of the sprayer, read the instructions carefully, including all warnings.

⚠ CAUTION

Never pull on a wire to disconnect it. Pulling on a wire could loosen the connector from the wire.

2. Test your repair before regular operation of the sprayer to be sure that the problem is corrected. If the sprayer does not operate properly, review the repair procedure to determine if everything was done correctly. Refer to the Troubleshooting Charts to help identify other possible problems.
3. Make certain that the service area is well ventilated in case solvents are used during cleaning. Always wear protective eyewear while servicing. Additional protective equipment may be required depending on the type of cleaning solvent. Always contact the supplier of solvents for recommendations.

Replacing the Motor

1. Unplug the unit.
2. Loosen and remove the four motor cover screws. Remove the motor cover.
3. Disconnect the black and red wires coming from the pump housing. Disconnect the black and red wires from the capacitors. Disconnect the black and red wires from the motor.
4. Remove the capacitors from their mounting clip.
5. Loosen and remove the four motor mounting screws.
6. Pull the motor out of the pump housing.

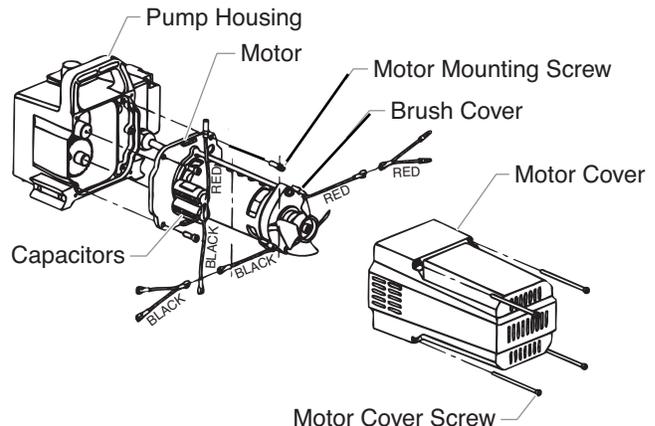
NOTE: If the motor will not dislodge from the pump housing:

- Remove the front cover plate.
- Using a rubber mallet, carefully tap on the front of the motor crankshaft that extends through the connecting rod.

7. With the motor removed, inspect the gears in the pump housing for damage or excessive wear. Replace the gears, if necessary.
8. Install the new motor into the pump housing.

NOTE: Rotate the motor fan manually until the armature gear engages with the mating gear in the pump housing.

9. Secure the motor with the four motor mounting screws.
10. Push the capacitors into their clip on the new motor.
11. Reconnect the wires (refer to the electrical schematic in the Parts List section of this manual).
12. Slide the motor cover over the motor. Secure the motor cover with the four motor cover screws.



Replacing the Motor Brushes

Perform this procedure using Motor Brush Kit.

1. Loosen and remove the four motor cover screws. Remove the motor cover.
2. Loosen and remove the two shroud screws. Remove the shroud.
3. Using a small screwdriver, pry off the two plastic brush covers.
4. Disconnect the black and red wires from the motor brushes. Remove the motor brushes.
5. Install the new motor brushes and snap on the plastic brush covers.
6. Reconnect the black and red wires from the motor brushes.
7. Position the shroud over the motor fan. Secure the shroud with the two shroud screws.
8. Slide the motor cover over the motor. Secure the motor cover with the four motor cover screws.

Replacing the Gears

1. Loosen and remove the four motor cover screws. Remove the motor cover.
2. Disconnect the black and red wires coming from the pump housing.
3. Loosen and remove the four motor mounting screws.
4. Pull the motor out of the pump housing.

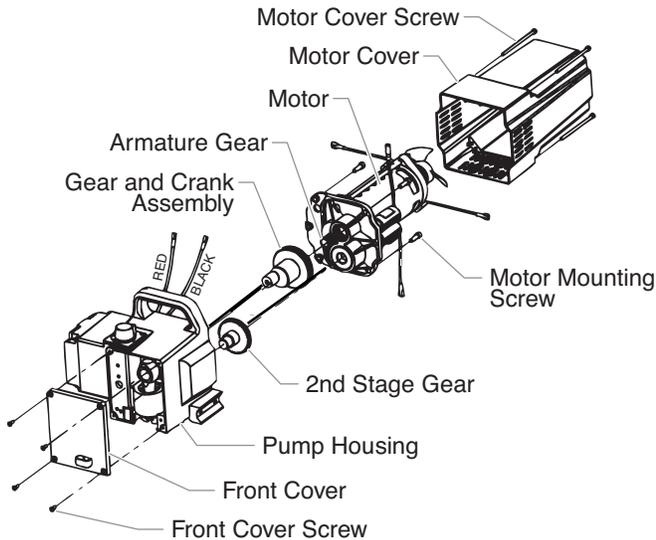
NOTE: If the motor will not dislodge from the pump housing:

- Remove the front cover plate.
- Using a rubber mallet, carefully tap on the front of the motor crankshaft that extends through the connecting rod.

5. Inspect the armature gear on the end of the motor for damage or excessive wear. If this gear is completely worn out, replace the entire motor.
6. Remove and inspect the 2nd stage gear for damage or excessive wear. Replace if necessary.
7. Remove and inspect the gear and crank assembly for damage or excessive wear. Replace if necessary.

- Reassemble the pump by reversing the above steps. During reassembly, make sure the thrust washers is in place.

NOTE: Refill the gear box with five ounces of Lubriplate



Replacing the Transducer

- Loosen and remove the four front cover screws. Remove the front cover.
- Stop the sprayer at the bottom of its stroke so that the piston is in its lowest position. Turn off and unplug the sprayer.

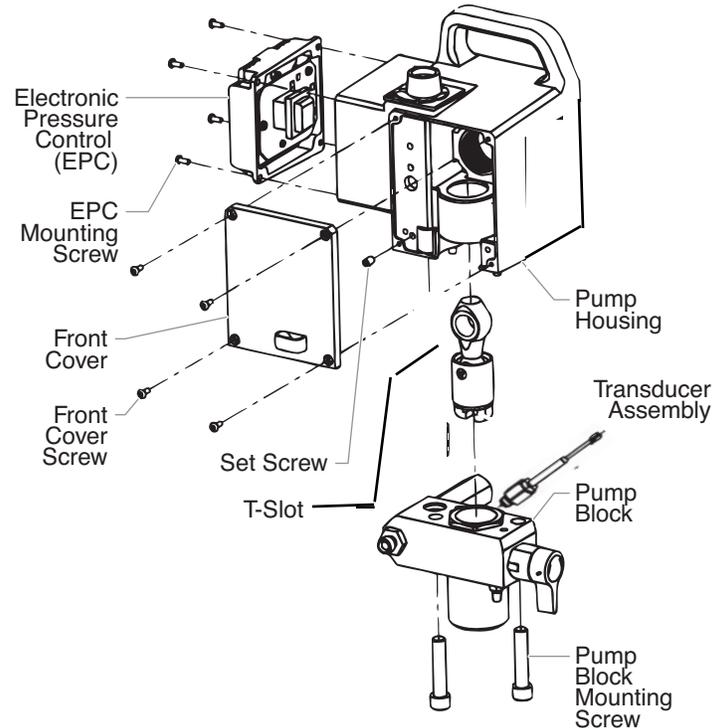
WARNING

Before proceeding, follow the Pressure Relief Procedure outlined previously in this manual. Additionally, follow all other warnings to reduce the risk of an injection injury, injury from moving parts or electric shock. Always unplug the sprayer before servicing!

- Tilt the pump back for easy access to the fluid section.
- Using a hex wrench, loosen and remove the two pump block mounting screws.
- Pull the pump block down approximately 1/2" from the pump housing to clear the transducer.
- Slide the pump block and piston rod forward until the piston rod is out of the T-slot on the connecting rod.
- Loosen and remove the four electronic pressure control (EPC) mounting screws.
- Pull back the EPC for access to the transducer plug-in.
- Unplug the transducer connection from EPC board location
- Using an hex wrench, loosen and remove the set screw from the bottom of the pump housing.
- Slide the transducer assembly out of the bottom of the pump housing.
- Install the new transducer assembly into the pump housing.
- Thread the set screw into the pump housing and tighten securely.
- Plug the transducer connection into the EPC board at location
- Reassemble the pump by reversing steps 1–8.

CAUTION

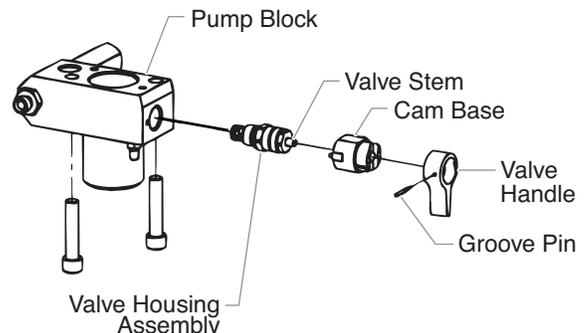
Make sure the transducer is aligned properly with the hole in the pump block during reassembly. Improper alignment may cause damage to the transducer gasket.



Replacing the PRIME/SPRAY Valve

Perform the following procedure using PRIME/SPRAY valve replacement kit

- Push the groove pin out of the valve handle.
- Remove the valve handle and the cam base.
- Using a wrench, loosen and remove the valve housing assembly.
- Make sure the gasket is in place and thread the new valve housing assembly into the pump block. Tighten securely with wrench.
- Place the cam base over the valve housing assembly. Lubricate the cam base with grease and line up the cam with the pump block.
- Line up the hole on the valve stem with the hole in the valve handle.
- Insert the groove pin into the valve handle and through the valve stem to secure the valve handle in position.



Servicing the Fluid Section

Use the following procedures to service the valves and repack the fluid section. Perform the following steps before performing any maintenance on the fluid section.

1. Loosen and remove the four front cover screws. Remove the front cover.
2. Stop the sprayer at the bottom of its stroke so that the piston is in its lowest position. Turn off and unplug the sprayer.

WARNING

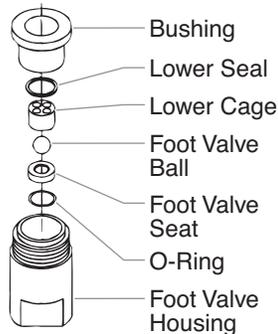
Before proceeding, follow the Pressure Relief Procedure outlined previously in this manual. Additionally, follow all other warnings to reduce the risk of an injection injury, injury from moving parts or electric shock. Always unplug the sprayer before servicing!

3. Unscrew the return hose assembly from the pump block.
4. Remove the retaining clip that holds the suction set in the foot valve. Pull the suction set out of the foot valve.
5. Tilt the pump back for easy access to the fluid section.

Servicing the Valves

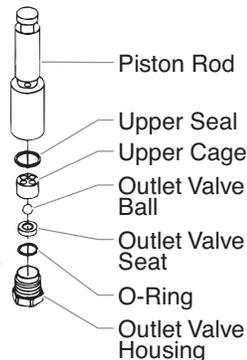
The design of DP's fluid section allows access to the foot valve and seat as well as the outlet valve and seat without completely disassembling the fluid section. It is possible that the valves may not seat properly because of debris stuck in the foot valve seat or outlet valve seat. Use the following instructions to clean the valves and reverse or replace the seats.

1. Using a wrench, loosen and remove the foot valve housing from the pump block.
2. Clean out any debris in the foot valve housing and examine the valve housing and seat. If the seat is damaged, reverse or replace the seat.
3. Using a 19mm socket wrench, loosen and remove the outlet valve housing from the piston rod.



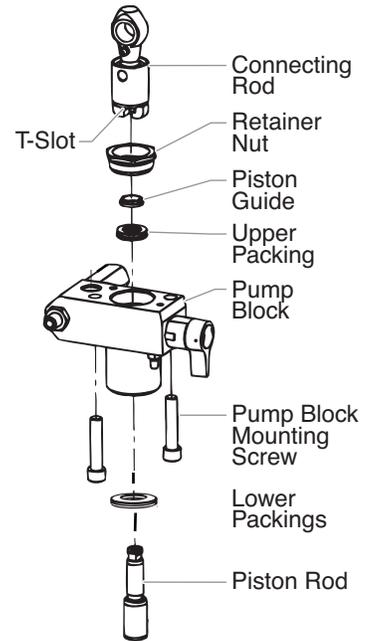
NOTE: Always service the outlet valve with the piston rod attached to the pump. This will prevent the piston rod from rotating during disassembly of the outlet valve.

4. Clean out any debris and examine the valve housing and seat. If the seat is damaged, reverse or replace the seat.
5. Remove, clean, and inspect the upper cage and upper ball. Replace if they are worn or damaged.
6. Reassemble the valves by reversing the steps above.



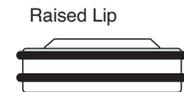
Repacking the Fluid Section

1. Remove the foot valve and outlet valve assemblies using the steps in the "Servicing the Valves" procedure above.
2. Using a hex wrench, loosen and remove the two pump block mounting screws.
3. Pull the pump block down approximately 1.5 cm (1/2") from the pump housing.
4. Slide the pump block and piston rod forward until the piston rod is out of the T-slot on the connecting rod.
5. Slide the piston rod out through the bottom of the pump block
6. Loosen and remove the retainer nut and piston guide from the pump block.
7. Remove the upper and lower packings from the pump block.
8. Clean the pump block and install the new upper and lower packings. Refer to the illustration below for proper packing orientation.



Install upper packing with raised lip and O-ring facing down.

Install lower packings with raised lip and O-ring facing up.



9. Inspect the piston rod for wear and replace if necessary.
10. Reassemble the outlet valve assembly into the piston rod. Tighten the outlet valve housing with a wrench until secure.

NOTE: Use the T-slot on the connecting rod to hold the piston rod in position while securing the outlet valve housing.

CAUTION

Never use a wrench on the piston itself. This could cause damage to the piston and cause leakage.

11. Insert the piston guide into the retainer nut. Thread the retainer nut into the pump block until it is hand tight.
12. Slide the piston guide tool (included in the repacking kit) over the top of the piston rod and insert the piston rod through the bottom of the pump block. Using a rubber mallet, tap the bottom of the piston rod lightly until the piston rod is in position in the pump block.

NOTE: Coat the piston guide tool and the piston rod with grease before inserting them into the pump block.

13. Using a wrench, tighten the retainer nut securely.

14. Slide the top of the piston rod into the T-slot on the connecting rod.
15. Position the pump block underneath the pump housing and push up until it rests against the pump housing.

⚠ CAUTION

Make sure the transducer is aligned properly with the hole in the pump block during reassembly. Improper alignment may cause damage to the transducer gasket.

16. Thread the pump block mounting screws through the pump block and into the pump housing. Tighten securely.
17. Reassemble the foot valve assembly into the pump block.
18. Insert the elbow on the suction set into the bottom of the foot valve. Position the retaining clip into the foot valve to secure the suction set assembly.
19. Thread the return hose into the pump block and tighten securely.
20. Place the front cover on the pump housing and secure in position using the four front cover screws.
21. Turn on the sprayer by following the procedure in the "Operation" section of this manual and check for leaks.

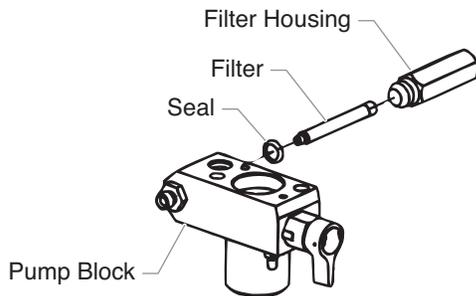
Replacing the Filters

Pump Filter

1. Loosen and remove the filter housing.
2. Turning anticlockwise, pull out filter from the pump block.

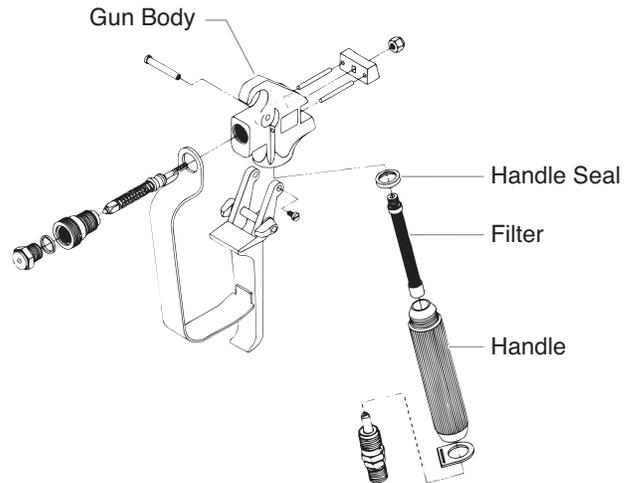
NOTE: Right-handed threads require turning the filter anticlockwise to remove.

3. Inspect the seal. Based on inspection, clean or replace the seal.
4. Turning counterclockwise, plug the new or cleaned filter into the pump block.
5. Slide the filter housing over the filter and thread it into the pump block until secure.



Gun Filter

1. Move the gun trigger lock to the unlocked position.
2. Loosen and remove the handle from the gun body.
3. Pull out the filter from the gun body.
4. Plug the new or cleaned filter into the gun body.
5. Make sure the handle seal is in position and thread the handle into the gun body until secure.
6. Move the gun trigger lock to the locked position.



Troubleshooting

Problem

The unit will not run.

Cause

1. The unit is not plugged in.
2. ON/OFF switch is defective.
3. The pressure is set too low (pressure control knob set at minimum setting does not supply power to unit).
4. Faulty or loose wiring.
5. Excessive motor temperature.

Solution

1. Plug the unit in.
2. Replace the ON/OFF switch.
3. Turn the pressure control knob clockwise to supply power to the unit and increase the pressure setting.
4. Inspect or take to a DP authorized service center.
5. Allow motor to cool.

The unit will not prime.

1. The PRIME/SPRAY valve is in the SPRAY position.
2. Air leak in the siphon tube/suction set.
3. The pump filter and/or inlet screen is clogged.
4. The siphon tube/suction set is clogged.

1. Rotate the PRIME/SPRAY valve clockwise to the PRIME position.
2. Check the siphon tube/suction set connection and tighten or re-tape the connection with Teflon tape.
3. Remove the pump filter element and clean. Remove the inlet screen and clean.
4. Remove the siphon tube/suction set and clean.

The unit will not build or maintain pressure.

1. The spray tip is worn.
2. The spray tip is too large.
3. The pressure control knob is not set properly.
4. The pump filter, gun filter, or inlet screen is clogged.
5. Material flows from the return hose when the PRIME/SPRAY valve is in the SPRAY position.
6. Air leak in the siphon tube/suction set.
7. There is external fluid leak.
8. There is an internal fluid section leak (packings are worn and/or dirty, valve balls are worn).
9. Worn valve seats
10. Motor powers but fails to rotate

1. Replace the spray tip following the instructions that came with the spray gun.
2. Replace the spray tip with a tip that has a smaller orifice following the instructions that came with the spray gun.
3. Turn the pressure control knob clockwise to increase the pressure setting.
4. Remove the pump filter element and clean. Remove the gun filter and clean. Remove the inlet screen and clean.
5. Clean or replace the PRIME/SPRAY valve.
6. Check the siphon tube/suction set connection and tighten or re-tape the connection with Teflon tape.
7. Check for external leaks at all connections. Tighten connections, if necessary.
8. Clean the valves and service the fluid section following the "Servicing the Fluid Section" procedure in the Maintenance section of this manual.
9. Reverse or replace the valve seats following the "Servicing the Fluid Section" procedure in the Maintenance section of this manual.
10. Take unit to a DP authorized service center.

Fluid leakage at the upper end of the fluid section.

1. The upper packings are worn.
2. The piston rod is worn.

1. Repack the pump following the "Servicing the Fluid Section" procedure in the Maintenance section of this manual.
2. Replace the piston rod following the "Servicing the Fluid Section" procedure in the Maintenance section of this manual.

Troubleshooting

Problem

Excessive surge at the spray gun.

Cause

1. Wrong type of airless spray hose.
2. The spray tip worn or too large.
3. Excessive pressure.

Solution

1. Replace hose with a minimum of 5m (50') x 10mm (1/4") grounded textile braid airless paint spray hose.
2. Replace the spray tip following the instructions that came with the spray gun.
3. Rotate the pressure control knob counterclockwise to decrease spray pressure.

Poor spray pattern.

-
1. The spray tip is too large for the material being used.
 2. Incorrect pressure setting.
 3. Insufficient fluid delivery.
 4. The material being sprayed is too viscous.

-
1. Replace the spray tip with a new or smaller spray tip following the instructions that came with the spray gun.
 2. Rotate the pressure control knob to adjust the pressure for a proper spray pattern.
 3. Clean all screens and filters.
 4. Add solvent to the material according to the manufacturer's recommendations.

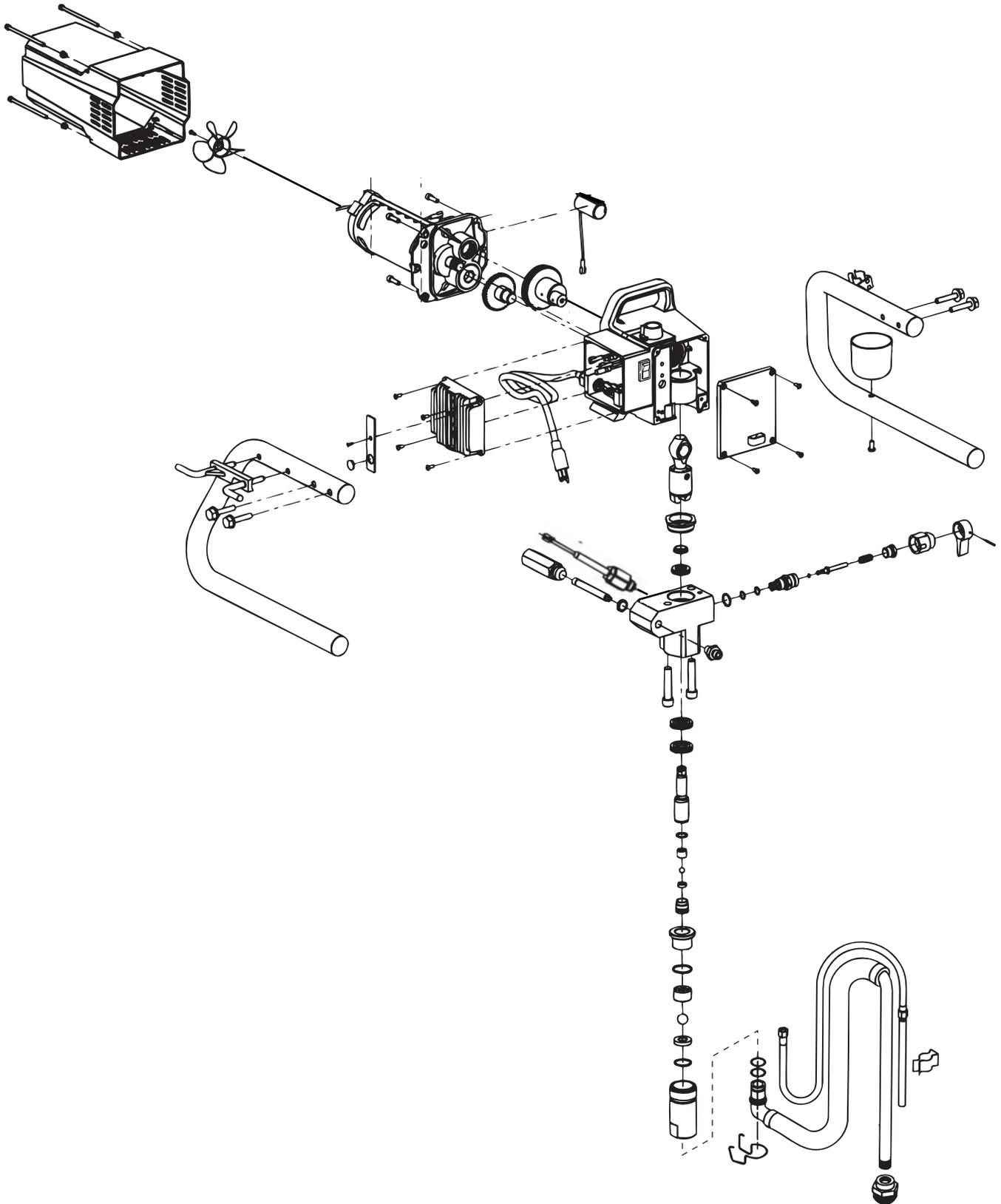
The unit lacks power.

-
1. The pressure adjustment is too low.
 2. Improper voltage supply.

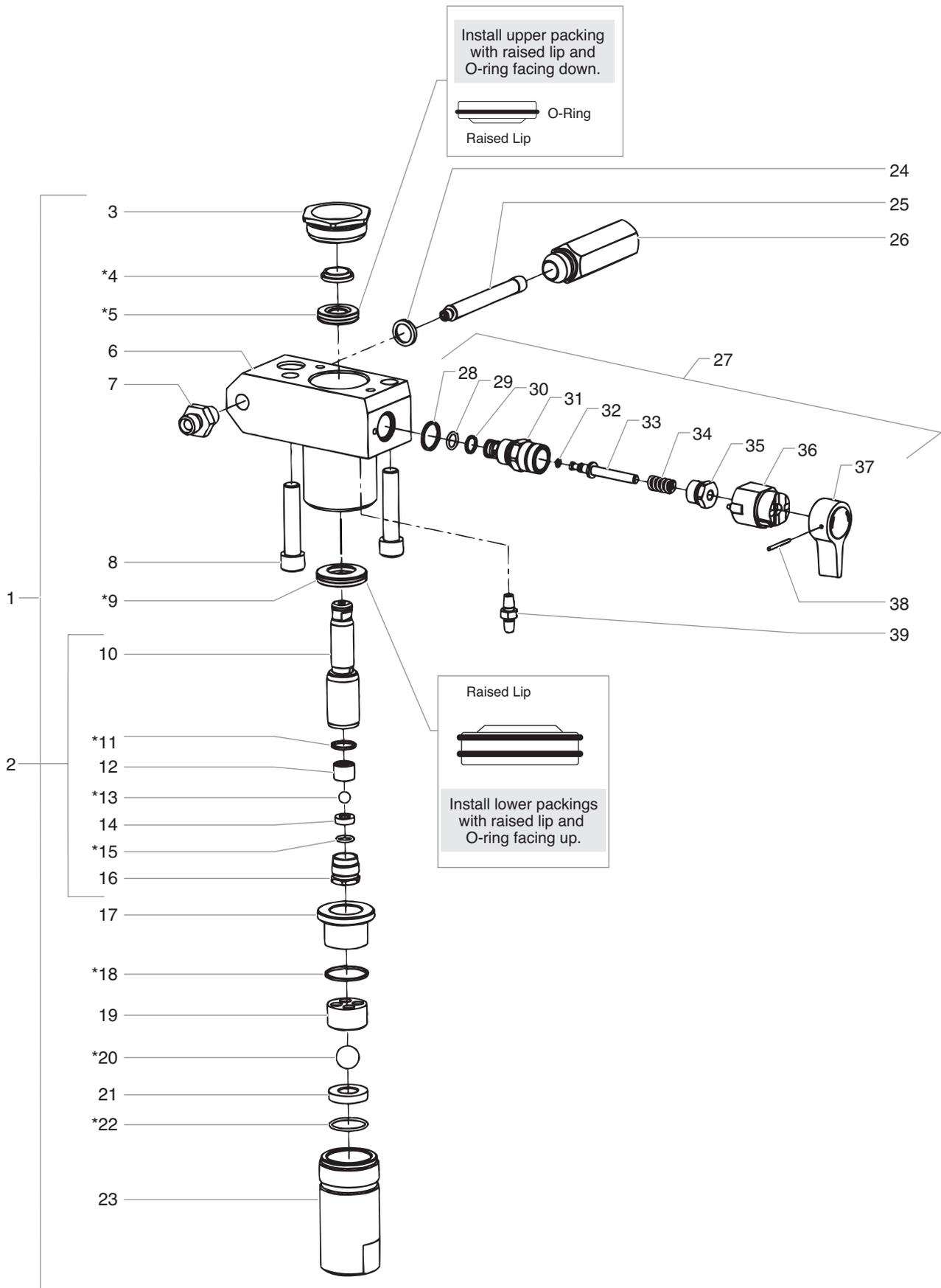
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1. Rotate the pressure control knob clockwise to increase the pressure setting.
 2. Connect the input voltage to the proper voltage for the unit.

Parts List

Main Assembly



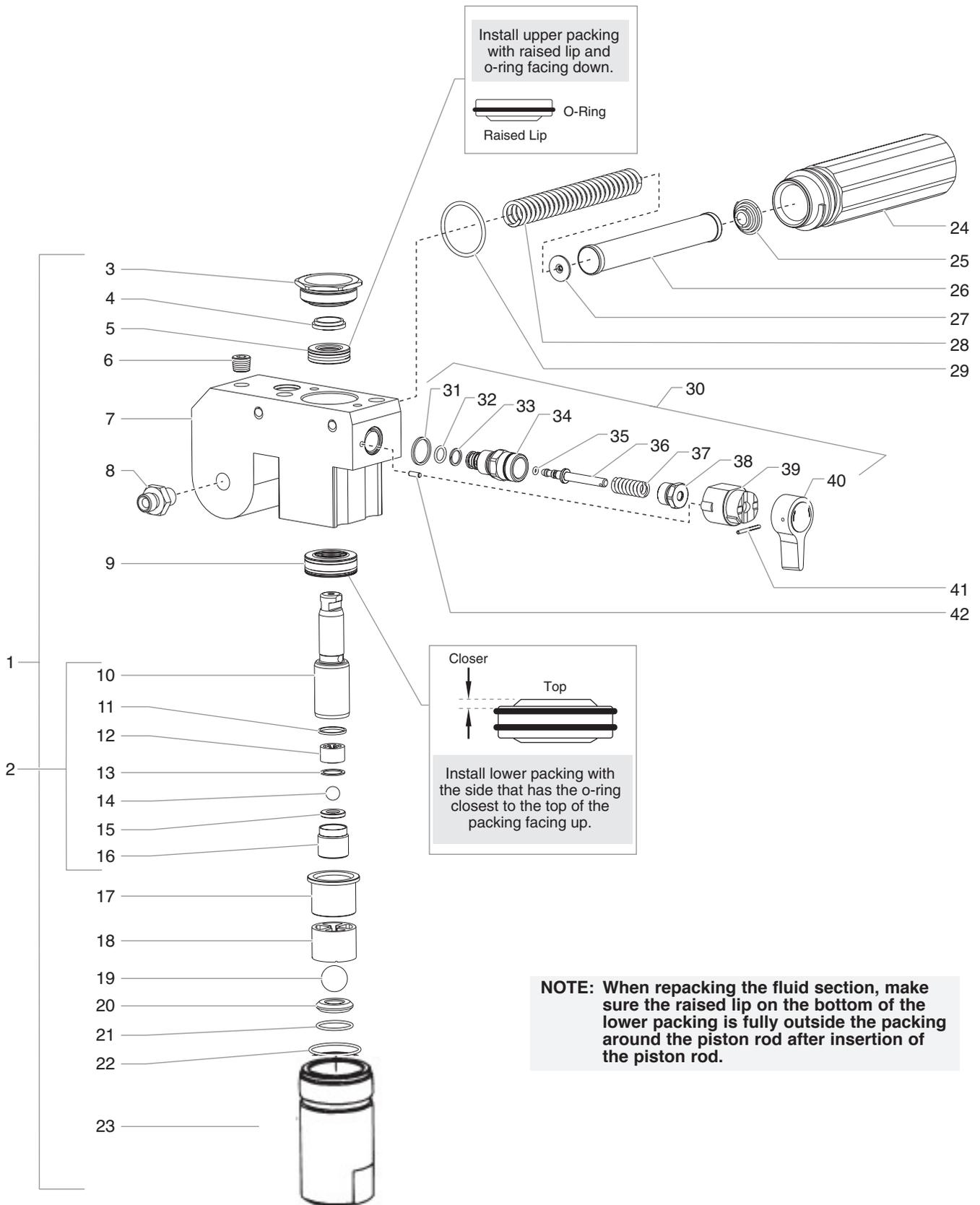
Fluid Section Assembly For DP-6389 and DP-6640i



Item	Description	Quantity
1	Fluid section (excludes items 24–38)	1
	Fluid section complete (includes filter and PRIME/SPRAY valve assembly)	
2	Piston assembly (includes items 10–16)	1
3	Retainer	1
4	Piston guide	1
5	Upper packing w/tool	1
6	Pump block	1
7	Fitting	1
8	Screw	2
9	Lower packing	2
10	Piston rod	1
11	Upper seal	1
12	Upper cage	1
13	Outlet valve ball	1
14	Outlet valve seat	1
15	O-ring	1
16	Outlet valve retainer	1
17	Bushing	1
18	Lower seal	1
19	Lower cage	1
20	Foot valve ball	1
21	Foot valve seat	1
22	O-ring	1

Item	Description	Quantity
23	Foot valve housing	1
24	Seal	1
25	Filter	1
26	Filter housing	1
27	PRIME/SPRAY valve assembly (includes items 28–38)	1
28	Gasket	1
29	O-Ring, Viton	1
30	O-Ring, Teflon	1
31	Valve housing	1
32	O-Ring, Viton	1
	O-Ring, Teflon (optional)	1
33	Valve stem	1
34	Spring	1
35	Valve retainer	1
36	Cam base	1
37	Valve handle	1
38	Groove pin	1
39	Fitting	1

Fluid Section Assembly For DP-6740i



Item	Description	Quantity
1	Fluid section	
2	Piston assembly (includes items 10–16)	1
3	Retainer nut	1
4	Piston guide	1
5	Upper packing assembly	1
6	Plug	1
7	Pump block (includes item 6)	1
8	Outlet fitting	1
9	Lower packing assembly	2
10	Piston rod	1
11	Upper seal	1
12	Upper cage	1
13	Nylon washer	1
14	Outlet valve ball	1
15	Outlet valve seat	1
16	Outlet valve retainer	1
17	Adapter	1
18	Lower cage	1
19	Foot valve ball	1
20	Foot valve seat	1
21	O-ring	1
22	Lower seal	1
23	Foot valve housing	1
24	Filter housing	1
25	Filter spring	1
26	Filter	1

Item	Description	Quantity
27	Adapter	1
28	Filter support spring	1
29	O-ring	1
30	PRIME/SPRAY valve assembly (includes items 31–43)	1
31	Gasket	1
32	O-ring, Viton	1
33	O-ring, Teflon	1
34	Valve housing	1
35	O-ring, Viton	1
36	Valve stem	1
37	Spring	1
38	Valve retainer	1
39	Cam base	1
40	Valve handle	1
41	Groove pin	1
42	Dowel pin	1

Accessories

Airless Tip Selection

Tips are selected by the orifice size and fan width. The proper selection is determined by the fan width required for a specific job and by the orifice size that will supply the desired amount of fluid and accomplish proper atomization.

For light viscosity fluids, smaller orifice tips generally are desired. For heavier viscosity materials, larger orifice tips are preferred. Please refer to the chart below.

HINTS:

Maximum tip hole sizes supported by sprayers;

DP-6389 0.021 in DP-6640i 0.023 in DP-6740i 0.025in

NOTE: Do not exceed the sprayer's recommended tip size.

The following chart indicates the most common sizes and the appropriate materials to be sprayed.

Tip Size	Spray Material	Filter Type
.011 – .013	Lacquers and stains	100 mesh filter
.015 – .019	Oil and latex	60 mesh filter
.021 – .026	Heavy bodied latex and blockfillers	30 mesh filter

Fan widths measuring 8" to 12" (20 to 30 cm) are preferred because they offer more control while spraying and are less likely to plug.

Piston Lube

Specially formulated to prevent materials from adhering to the piston rod, which becomes abrasive to the upper seals. Piston Lube will break down any material that may accumulate in the oil cup and keep it from drying.

